

Example 1 reads:

A slurry was prepared containing 50 lbs. of Evanite 706X fiber having an average fiber diameter of about 0.69 μ , 30 lbs. of Evanite 712X fiber having an average fiber diameter of about 4.2 μ , 3 lbs. of Owens-Corning Chopped Glass fiber DE having an average fiber length of about 0.25 inches, and 3 lbs. of Owens-Corning Chopped Glass fiber DE having an average fiber length of about 0.5 inches. The slurry contained water and sulfuric acid sufficient to yield a fiber concentration of 0.75% by weight. The headbox pH was varied between 2.3 and 3.8, and the samples of web were collected at a headbox pH of 3.8, 3.6 and 2.3. The experiment was repeated containing the same fiber formulation combined with water and ammonium hydroxide to vary the headbox pH between 4.3 and 10.3. Samples were collected at a headbox pH of 10.4, 9.6, 9.2, 8.4, 7.0, 6.0 and 4.2. The properties of each sample were tested and are shown in the chart below. All tests were conducted at an air velocity of 5.33 cm/sec with a DOP particle size of 0.3 microns.

(Application, p. 9, para. 0034.) The first set of samples collected at pH's of 3.8, 3.6, and 2.3 were obtained by adding an acid (sulfuric acid) to the head box. The second set of samples were collected at headbox pH's between 4.3 and 10.3. A pH of 4.3 is acidic. This pH cannot be obtained by mixing glass fibers with water, as neither glass nor water have an acidic pH. The typical pH of water is between 6.5 and 7 – not 4.3. Accordingly, while Example 1 does not explicitly state that the acid was also added to the pH (although it does say the experiment was repeated), an acid was *necessarily* added to the slurry prior to adding a base (ammonium hydroxide). This is the only possible way to obtain a pH of 4.3. Accordingly, Example 1 does in fact show that both steps (1) and (2) mentioned above were performed, and thus the combination of steps is necessary to achieve the claimed gamma value. As a result, the prior art does not inherently possess the claimed gamma value. All claims thus distinguish over the prior art.

Applicants also provide the following additional comments in response to the pending rejections, in which independent claims 1, 8, and 13 are rejected as being obvious over Pierce, Dong/Pall, and Perez. Claim 13 is also rejected as being obvious over Pierce and Dong/Pall alone, however this rejection is unclear since the Examiner appears to admit that Pierce combined with Dong/Pall does not teach the claimed invention, and thus further relies on Perez. Regardless, Applicants submit that independent claims 1, 8, and 13 distinguish over the cited references, and claims 2-7, 9-12, and 14-20 are allowable at least because they depend from an allowable base claim.

With regard to Dong, the Examiner asserts that Dong inherently discloses the claimed gamma

value because Dong teaches varying the pH of a slurry to provide a glass layer with a uniform weight. This is incorrect. Dong does not teach adding any type of acid to a slurry to adjust the pH of the slurry. Dong merely states that the slurry has a pH from about 5 to about 10. A charged viscosity modifier is added to the slurry, but this is not necessarily an acid, nor does it necessarily change the pH of the slurry. Thus, Dong cannot be relied on for the proposition that varying the pH will provide a uniform weight, and as a result no person having ordinary skill in the art would modify Pierce in view of Dong. Moreover, the Examiner has failed to recognize that Dong is non-analogous prior art that cannot be relied on to modify Pierce. Dong is directed to roofing materials, and does not disclose any type of filter material. Dong is thus not within the field of applicants endeavor, namely filter materials, and Dong is not reasonably pertinent to the problem being solved, namely improving the filtration efficiency. For these same reasons, no person having ordinary skill in the art would rely on the teachings of a reference directed to roofing materials (Dong) to modify the filter material of Pierce.

With regard to Pall, which the Examiner likewise relies on to teach adjusting the pH, Pall teaches adjusting the pH to between 8 and 10 in order to increase the *precipitation efficiency* of the binder. There is no reason to adjust the pH of the slurry of Pierce, in view of Pall, because Pierce does not use a binder in the slurry and thus there is no need to increase the precipitation efficiency of the binder. Pierce applies a binder to the mat *after* the mat is formed to coat the fibers. Accordingly, no person having ordinary skill in the art would be motivated to modify Pierce in view of Pall, as suggested by the Examiner.

With regard to Perez, it is unclear why the Examiner is even relying on this reference. The Examiner asserts that Perez teaches using a surface area of greater than $0.25 \text{ m}^2/\text{gm}$, typically about $0.5 \text{ m}^2/\text{gm}$ to $30 \text{ m}^2/\text{gm}$, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the surface area from about $0.5 \text{ m}^2/\text{gm}$ to $30 \text{ m}^2/\text{gm}$, motivated by the expectation of successfully practicing the invention of Pierce. A "surface area" is not an object that can merely be used, but rather it is a property of a filter media that has to be achieved during manufacturing. A person skilled in the art cannot, upon reading Perez, just decide to use the disclosed surface area with the filter of Pierce. They would have to modify the teachings of Pierce in order to obtain the claimed surface area. The Examiner has not explained how one would

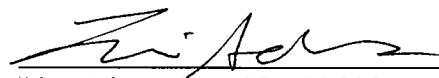
modify Pierce in view of Perez to arrive at the claimed surface area, and in fact Perez does not even explain how to obtain the claimed surface area. Perez merely discloses a filter having the claimed surface area. If a person skilled in the art wanted to make a filter having the claimed surface area, they would simply make the filter of Perez. Perez therefore cannot be relied on to modify Pierce to teach the surface area recited in claim 1. This reason alone is sufficient to render claim 1 allowable over the prior art.

The same reasoning applies to Head, which the Examiner relies on to teach the apparent density recited in independent claim 8. As explained in Applicants response filed on November 13, 2006, Head does not disclose an apparent density. Head discloses a fiber density – this is not apparent density. Regardless, even if Head taught the claimed apparent density, as discussed above with respect to Pall the apparent density is not an object that can simply be added to a filter. It has to be achieved, and in order to achieve it Pierce would have to be modified in view of Head. The Examiner has, however, failed to explain how or even why one would modify Pierce in view of Head. Head therefore cannot be relied on to modify Pierce to teach the apparent density recited in claim 8. This reason alone is sufficient to render claim 8 allowable over the prior art.

In conclusion, Applicant submits that all claims are now in condition for allowance, and allowance thereof is respectfully requested. The Examiner is encouraged to telephone the undersigned attorney for Applicant if such communication is deemed to expedite prosecution of this application.

Respectfully submitted,

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